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Rural Landscaping: a forgotten area or a growing opportunity?

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Abstract

For decades, landscaping has been interchangeable with urbanism. As ecotourism becomes more popular, there is also a growing demand to look at rural landscaping. In this article, we present an overview of rural landscaping as well as a review of cases combining rural environment and city elements. The interaction of these elements will reflect the importance of preserving local culture and responsible development, especially for small and medium landowners. More and more people look for an escape from the urban areas, whether it be through visiting rural areas or by bringing rural landscaping to the city. Structuring rural landscaping could lead to considerable profitability as well as encouraging the preservation of rural spaces and become a considerably new field of work for landscape architectures and architectures.

Keywords: Rural landscaping. Landscape design. American opportunities.

1 Introduction

Santos and Cunha (2009) presents rural landscaping with aims to create spaces for city inhabitants that do not have the opportunity to enjoy natural environments. For example, urban areas create their own idyllic and attractive landscape surrounding, with plants that require high maintenance care that uses excessive water, special plant food, and insecticides. On the other hand, rural areas have a diverse, attractive, multifunctional and productive environment that could be a link for a positive relationship between growing cities and natural landscapes. The integration of growing cities within the natural environments is shaped more by people than by nature.

With industrialization in the cities of many countries, soil and water contamination can be also a problem and it is more important than ever to be responsible with our natural resources. Many abandon industrial sites have left behind conditions that need remedial action. This can be an opportunity for landscape designers and developers to use these spaces to not only clean up the environment but create a beautiful rural landscape to allow those people living in cities to have the opportunity to enjoy a natural setting. This can also be used to educate the importance of creating sustainable greenspaces, taking care of our land and cleaning up polluted sites left behind by less responsible parties.

Xavier (2007) points out the importance of considering rural areas in landscaping projects. Popular models based on the use of representative elements of the region give the landscape designs a touch of local cultural designs. These designs emerged as models for construction to give a cultural identity to a special territory.

Argollo Ferrão (2007) proposes to integrate and characterize the "non-urban space" with focus on rural heritage, its sustainability and valorization. Rural environments have evolved, developing the rise of new areas of study and knowledge. For example, new studies have developed in engineering that are directly or indirectly involved with regional planning. In architecture and urbanism, the careers more suitable to develop programs and ideas to care more for the rural environment have been drawing attention to the immense cultural and rural heritage that Brazil has to offer. The responsibility to protect the natural environment can be placed on the hands of private land owners, developers and farmers.

Junior et al (2013) mentions the importance of native plants that exist in rural areas. The use of landscape designs in rural areas could focus in retention of native plants. Investments in research on planning and designing in rural settings will increase the possibilities of positive outcomes. For instance, rural Brazil shows a dynamic environment with a variety of animal life and native plants. Some of these dynamic rural areas have been exposed to controlled tourism that works with the environment and not against it.

Preserving the natural landscape through rural tourism is a growing area but there is room for improvement. Low-impact tourism, responsible rural management techniques and new technologies in farming management can be used to reach a new level of social and economic well-being never achieved before. Thus, rural landscaping is becoming a topic of attention for new professionals that are looking for placement. It is a growing opportunity for all.

2 Combining Rural Landscaping and City Environments

There are various ways to make use of rural landscaping. There is the obvious landscaping in rural residences and farms, community parks, and within cities for those who cannot escape the cities. Within a city, rural elements can be incorporated into private homes, in a resident's yard space or on a rooftop of a downtown apartment. Developers may even want to take an abandoned industrial site to create a brownfields property by remediating and redeveloping the property.

To start any project, a plan needs to be in place. That is where landscape designers come in. Designers know the right plants and combination of plants for a property, the right location within the property and the best way to make use of the local culture and climate. Designers can have a vision and put it on paper. Using the layout of a property and combining, changing and incorporating some of the current landscape, the landowners can make their property both attractive and practical, while preserving the natural and cultural attributes of the area.

In designing a landscape, big or small, preserving natural habitats and resources and creating a sustainable landscape should be a priority. Creating a sustainable design will impact the landowner and community by reducing environmental impact, water consumption, and maintenance time and costs, while offering beauty, recreation and relaxation.

There are several things to consider when taking on a landscaping project. Knowing how the property is going to be utilized is valuable for planning. Knowledge of the local soils, climate, amount and distribution of moisture, wildlife, topography, slope stability, types and availability of materials best for the job, restrictions and permitting is needed as they all play a part in creating a sustainable rural landscape. Any good landscape design utilizes the expertise of designers, engineers, architects, surveyors, horticulturalists and conservationists. They work together to create a space that solves a problem and enhances the surroundings for the landowner, and/or community (Bullen, 2020).

With this in mind, we will look at a few case studies to show the impact of designing a rural landscape. First, we will look at two parks in large cities in the United States, Millennium Park in Chicago and Central Park in New York. We will also look

at some examples of brownfields redevelopment in a small town and a larger city in Wisconsin, a town in Connecticut, and lastly at a small-town residential property in northeastern Washington.

Living in a city may make it difficult to enjoy natural settings. In many instances, parks and recreational areas were created to get away from overpopulated areas, urban sprawl, pavement and skyscrapers. When discussing renewed spaces in urban areas, it is important to realize that many of these sites have been contaminated or abused by past owners and users. Before we go into the city parks and how rural landscaping was brought into an urban area, we will define what brownfields are.

According to the United States Environmental Protection Agency (USEPA, 2019), brownfields are "properties that are or may be contaminated with hazardous substances, pollutants, petroleum, or other contaminants". They often create unsightly or unhealthy conditions. Developers often redevelop these sites with the help of various programs by state and federal agencies to clean up these sites and create usable spaces such as parks, recreational areas, municipal facilities, and even residences. Brownfields redevelopment can reduce blight and improve the local environment by cleaning up the contamination and creating a landscape that would be enjoyed by the community.

3 US Parks

3.1 Millennium, Park, Chicago

In 1917, Grant Park was constructed on Chicago's east side. But much of the land was owned by the Illinois Central Railroad and was believed to be "untouchable" (City of Chicago, 2020), so the park was built around it. In 1997, Mayor Richard Daley hired an architect, Fank Gehry to create the park. The railroad tracks and parking lot were removed and the area cleaned up to create Millennium Park, complete with gardens, artwork, architecture, a music amphitheater, and the famous "Bean". What began as an unsightly space along Chicago's lakefront shoreline, with old railroad tracks, boulders, concrete blocks and parking lots, became greenspace in the middle of a major urban area combining the architecture of old and new buildings with greenery and colors of flowers, trees and shrubs. It is now one of Chicago's main attractions (Fig. 1).

Fig. 1. A view of Millennium Park, Chicago, USA

3.2 Central Park, Manhattan

Another major city had a problem of urban sprawl with no areas for residents to enjoy nature up close without traveling long distances. Rural landscapes were not available. In 1853, state officials approved funds to purchase an area in Manhattan to create a park, but the land was rocky and swampy. The government needed help turning this rugged land into an urban park. So, they held a design competition. A plan by writer and farmer, Frederick Law Olmstead and English architect Calvert Vaux was chosen (Kang, 2017). Central Park became a rural landscape in the middle of a major metropolitan area with woodlands, winding paths and natural landscapes for people in the city to enjoy.

3.3 Meridan Hub, Connecticut

Meriden, Connecticut is not known by most people like Chicago or New York. It is a small city of 60,000 people in Northeastern United States. In the center of town was an abandoned industrial property bisected by a waterway in a 100-year floodplain. It was part of a flood control and greenway plan, which made private development unlikely. With the help of the USEPA (2019), the area was cleaned up including removing hazardous soils, onsite soil management and an engineered cap. A park was created which included an amphitheater, pedestrian bridge and several miles of walkways.

3.4 Menominee Valley, Wisconsin

Milwaukee, Wisconsin has several industries. It also has several rivers in the area and many parks have been created along the rivers for people to get away from city life. The city planners have done a wonderful job of giving this city greenspace in which people can have the sense of rural living. But, often times, industry can hinder that. Sites can damage the environment and contaminate the soil and water. Such is the case along the Menominee River in Milwaukee. The Menominee River valley has been an area of much industrial activity, including the Milwaukee Road railroad with its rail yards and associated businesses. After years of industrial use, the soil had been contaminated.

In 1998, the city of Milwaukee and interested developers began to renew the valley. Through much planning and design, it would become an area of greenspace and stormwater management for future developments. As the valley began to be remediated and redeveloped, soil was removed and properly disposed of and the area was filled with clean soil to be raised up above the flood plain. The area was then graded to accommodate stormwater flow allowing water to naturally filter through the soil and crushed stone. In addition to being used as a stormwater management site, parks were built with athletic fields, picnic areas, trails and river access.

Because of the successful planning of the stormwater park, it was named one of the Sierra Club's *Best New Development Projects* in 2006 (WDNR, 2009).

3.5 LaCrosse, WI

Along the Mississippi River in western Wisconsin is the city of Lacrosse, with the population of about 50,000. The LaCrosse River also flows through here into the Mississippi. Before the use of natural gas as a source of energy, gas was manufactured for the city's energy needs. The purification process produced waste products that were left on site, creating soil and groundwater contamination. The new owner, Xcel Energy removed the contaminated soil and brought in four feet of clean soil (WDNR, 2007). They also stabilized the river bank which suffered erosion. Once the cleanup was complete, a park with bike trails was created to provide recreation and a natural setting for the residents and visitors to the area.

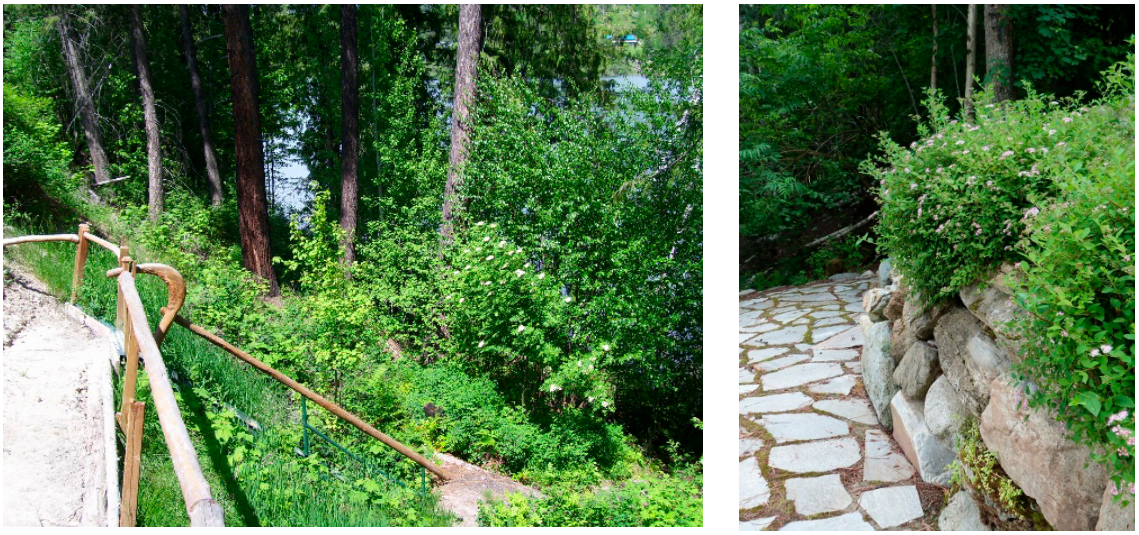
4 A residential design project overview

Ione, Washington, USA, a town of about 500 people, is located in the far northeastern corner of Washington state, situated along the Pend Oreille River between two mountain ranges. Homes along the river had steep slopes with steep banks that suffered erosion and slumping of the soil.

One family was concerned about the steep slope and the stability of the ground behind their house. The house was only 14 feet (4.3 meters) from the top of the slope. The slope needed to be landscaped to prevent damage to the house, create access to the river and prevent erosion and run-off into the river.

The project began by planning what was needed and budgeting to determine what could be done. Government agencies were contacted to determine what permits were necessary and what the regulations and restrictions were (Fig 2). The yard was mapped and cross sections were plotted to determine the space available and measure the slope. An engineer was brought in to make recommendations for stabilizing the slope and the bank.

Fig. 2. Residential project incorporating natural rural elements to the design Ione, Washington, USA



The next step was to make design plans on how to best utilize the space and stabilize the slope. With the expertise and knowledge of a landscape designer, drawings were used to determine how to reshape the slope and utilize retaining walls to create support for the material and add appeal and practicality to the space. The slope was recontoured, preserving as many of the native trees as possible. Utilizing natural rock from the area, the walls were built creating multiple levels of patios and raised gardens along the rock walls. Drainage pipes were installed to divert the water from the wall foundations to reduce sloughing and erosion.

Once the walls were in place and the slope was recontoured to minimize the angle of repose, the next stage of planning began. To create a beautiful rural landscape, plants were brought in that were conducive to the environment so that they would survive the climate of the Pacific Northwest. The landscape designer selected and located plants, those that did well in sun were in sunny spots and those that preferred shade were in shady areas. Peat moss and worm casings were used to plant each of the plants. This provided the nutrients and water retention needed for the flowers and shrubs. A drip

system with timers was installed to conserve water and minimize maintenance. Finally, the remaining space was hydroseeded with cocomat spread out to reduce erosion. The results were a safe and stable area that was a relaxing, natural environment to hang out, invite friends and enjoy the scenery and wildlife (Fig 3).

Figure 3. Lakeside view of the residential project incorporating natural rural elements to the design Ione, Washington, USA

The USEPA (2013) published some guidelines for a "water-smart landscape". With the advice of a designer and following these guidelines, many people can enjoy a sustainable, healthy, rural landscape and protect the resources around them.

- Use native plants or similar plants that need less water. Established and native plants require less water and less maintenance.
- Group plants according to their water needs and amount of sunlight needed. By grouping plants in this way, it reduces the chance of underwatering or overwatering.
- Maintain healthy soils. Healthy soils with the proper nutrients will aid in keeping plants healthy and reducing the need for fertilizer or added water.
- Be selective of planting grass. Grass commonly requires more water than other flowers or shrubs and can invade the other plants. Be sure the grass that is planted is low water-using native grasses.
- Minimize steep slopes. Steep slopes create more run-off and erosion. With more run-off, water does not absorb into the soil or roots.
- Water wisely. Avoid watering during the heat of the day. Use drip system with timers whenever possible and make adjustments as needed. Drip lines will introduce water directly to the roots at a controlled rate.
- Use mulch. Mulch will reduce evaporation, inhibit growth of weeds, and retain moisture while providing added nutrients.

Rural and urban landscape designs are similar in the primary purpose is to beautify and area while keeping functionality. Rural landscapes take it a step further allowing the landscape to be in harmony with the surrounding and maintaining sustainability. A sustainable landscape will last through the ages and have minimal impact on the environment (Shadow, 2008). In addition, many designs incorporate the local culture or other natural resources in the vicinity. With proper landscape principles, these attributes would be enhanced instead of overwhelmed. This practice is used not only for residential landscapes but also when designing parks, recreational areas and community gardens.

5 Conclusion

As more people seek to ask urbanization, rural landscapes become more important. Whether in a city, small town or in rural area, sustainable landscape designs are critical to reduce maintenance, costs and environmental impact while utilizing the local culture and natural attributes to make for a warm, comfortable atmosphere. As this demand increases, there is more need for knowledge and expertise of what is required to accomplish this. Overall, rural landscaping either in-site or by incorporating farm elements to city design, seems to be a growing opportunity for landscape designers and architects aiming to find a balance between sustainability and development.

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